Greek congeners. But there are three objections which render this method almost worthless except for employment in houses, gardens, enclosed fields, or other limited areas :—

"(1) It is very expensive ; the virus supplied to the Greek Government was paid for at the rate of 4s. a tube, containing enough when dissolved to treat about two imperial acres, a cost which in many instances would exceed the rent of the Scottish hill pasture. To this must be added the price of bread used in distributing the virus, which would appreciably raise the cost of the process. Thus to deal effectually with a hill farm of say 6000 acres, would entail an expenditure of from £700 to £1000, making the remedy more costly than the evil.

"(2) Mouse typhus is not contagious ; it can only be communicated to those animals that will swallow some of the virus. The allegation that healthy voles will become infected by devouring the bodies of the dead has not been satisfactorily proved. That Greek voles when in captivity have been observed to feed upon the corpses of their fellows hardly warrants the assumption that Scottish voles in a state of liberty will do the same ; and unless the disease were communicable from one animal to the other, it is not easy to see how the remedy could prove effective on extensive hill pastures.

"(3) The fluid loses its value in about eight days after preparation. Consequently much disappointment might ensue if, after a supply had been obtained, a fall of snow or wet weather were to interfere with its distribution over the land.

"The remedy which has been found most effectual in Thessaly is an injection of the fumes of bi-sulphide of carbon into the burrows. This, however, is a more expensive process than the other, besides being injurious to the health of those engaged in its application. It is, moreover, inapplicable to the Scottish vole (*Arvicola agrestis*), which does not burrow to a depth like the vole of Thessaly (*Arvicola Güntheri*), but lives in shallow runs amongst the roots of herbage.

"With the under-noted exceptions the natural enemies of the voles may be divided into two classes, viz., those which destroy the voles, and are harmless to sheep, crops, and game ; and those which, though preying on voles, are so hurtful in other ways as to have no claim to preservation :—

(i.) Vole-killers, harmless, or nearly so, to sheep, crops, and game.	(ii.) Vole-killers, hurtful in other ways.
Owls of all sorts,	Foxes,
Buzzards,	Ravens,
Kestrels,	Carrion and Hooded Crows,
and the smaller Seagulls.	Great Blackbacked Gulls,
	and Adders.

"Strict injunctions ought to be given by landowners that the birds mentioned in the first class should not be destroyed. Their presence in full numbers, though inadequate to avert an outbreak, would undoubtedly tend to mitigate it, and, as has been proved in the case of the short-eared owl, they have the faculty of multiplying a normally in presence of an unusual supply of food. They are at all events most useful allies to man in combating attacks of ground vermin.

"The Committee further deprecate in the strongest manner possible the use of the pole-trap for the capture of hawks. Besides the inhumanity of this device, it is indiscriminate, and harmless owls, kestrels, and buzzards are just as likely to be taken by it as are the more mischievous species.

"Three animals, diligent vole destroyers, have been omitted from both these lists, because they are undoubtedly hurtful to game. The first of these is the common rook (known to the shepherds as the corn crow), of which, however, the services to agriculture are now generally recognised.

"The other two animals referred to are the stoat and weasel. Of all the smaller beasts of prey these are perhaps the most hateful to gamekeepers, and it is hardly reasonable to expect that stoats should be allowed to multiply in game coverts, or in the vicinity of pheasant coops. But the Committee have no hesitation in recommending that weasels, which are persistent mouse-hunters and do little damage to game, should not be molested, at least on moorlands and hill pastures, where they can do little harm and much good."

THE ZOOLOGICAL SOCIETY.

THE report of the Council of the Zoological Society of London for the year 1892 was read at the annual general meeting on April 28, and printed copies of it were distributed shortly afterwards. The following extracts are of general interest.

"The considerations which prompted the Council of the Society, as announced in their report last year, to award two of its medals to the representatives of families through whose exertions the Great Skua has been retained as a veritable member of the British fauna, have induced the Council to act this year in like manner in regard to a still scarcer species—the osprey (*Pandion haliaetus*). It has been represented to the Council that for some years past but three pairs of this bird, which on many accounts is of great interest, have regularly bred in Scotland, and that their protection has been an object of much solicitude to those on whose property the nests are built. The Council are able to state that the effect of their former award has not only been beneficial to the birds concerned, but has been highly appreciated by the public at large, and they trust that the same good result will follow the bestowal of the Society's silver medal upon Donald Cameron, of Lochiel, and John Peter Grant, of Rothiemurchus, in recognition of the efforts made to protect the osprey in their respective districts."

These medals were presented to the above-named gentlemen at the general meeting of the Society on June 22.

Reference was made to the resolutions adopted by the Council in regard to steps proposed to be taken by the Government of New Zealand for the preservation of the native birds of that country. The resolutions were as follows :—

"That the Council of this Society have learnt with great satisfaction the steps that were proposed to be taken by the Earl of Onslow, when Governor of New Zealand, and by the Houses of General Assembly, for the preservation of the native birds of New Zealand, by reserving certain small islands suitable for the purpose, and by affording the birds special protection on these islands.

"That the Council much regret to hear that difficulties have been encountered in carrying out this plan as regards one of these islands (Little Barrier Island), and trust that the Governor of New Zealand may be induced to take the necessary steps to overcome these difficulties, and to carry out this excellent scheme in its entirety.

"The Council venture to suggest that, besides the native birds to be protected in these reserves, shelter should also be afforded to the remarkable Saurian, the Tuatera lizard (*Sphenodon punctatus*), which is at present restricted to some small islands on the north coast of New Zealand in the Bay of Plenty.

"The number of visitors to the Society's gardens in 1892 was 605,718. The corresponding number in 1891 was 598,730, showing an increase of 6988 entrances.

"The deaths during the past year have been 862 in number, being 40 in excess of the number of deaths during 1891. Of these the more important were—a lioness, a male cheetah, two common zebras, an aard wolf, a male beatrix antelope, and the last surviving giraffe.

"Two gentlemen have utilised the students' rooms for carrying on investigations. Mr. F. G. Parsons has been studying the comparative myology of the rodents ; and Mr. P. Chalmers Mitchell has commenced an investigation upon the spleen of the vertebrata.

"The number of animals belonging to the first three classes of vertebrates living in the Society's menagerie at the close of 1892 was 2413. The corresponding number on December 31, 1891, was 2232.

"The total number of registered additions to the menagerie in 1892 was 1335, of which 698 were acquired by presentation, 315 by purchase, 141 were bred in the gardens, 142 were received on deposit, and 39 obtained in exchange.

"Among the deaths of animals in 1892 occurs that of the last remaining individual of the stock of giraffes, a male, purchased January 27, 1879. The Society is now, for the first time since the arrival of the four original giraffes on May 24, 1836, without any representative of this mammal in its series. Nor does there seem to be at present much chance of our being able to supply the deficiency. Owing to the closure of the Soudan by the Mahdists the supplies of this and other large African mammals, which were formerly obtained *via* Cassala and Suakim, have ceased, and, so far as can be ascertained, there are now no living giraffes in the European market. There have been thirty individuals of the giraffe in the Society's gardens since 1836, of which seventeen were born there, and thirteen acquired by purchase. Of these thirty, one was presented to the Royal Zoological Society of Ireland in 1844, five have been sold at prices varying from £450 to £150, and the remainder have died in the gardens.

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"In concluding their Report the Council express their regret that it has not been possible, during the past year, to continue their former policy of adding to the permanent structures in the gardens. There are still several buildings much wanted for the better housing of certain parts of the collection, amongst which may be specified the anthropoid apes and the struthious birds, for which groups special accommodation is required. But in both these cases, to carry out the plans efficiently, a considerable expenditure would be necessary, and the margin of receipts over expenses is at present too slender to render it prudent to undertake the work. The Council look forward to the time when the small remaining balance of the mortgage-debt upon the Society's freehold house will be paid off, and when there will be at any rate a better prospect of devoting the surplus income to such purposes."

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

THE following is the list of scholarships and prizes just awarded at the Royal College of Science, London, with which is incorporated the Royal School of Mines:—First year's scholarships, Robert W. Forsyth, George W. Walker, John Thomas, Harry R. Prescott; second year's scholarships, Bernard E. Spencer, George S. West; "Edward Forbes" medal and prize of books for biology, Henry Lacey; "Murchison" medal and prize of books for geology, Joseph B. Morgan; "Tyndall" prize of books, for physics (Course I.), George D. Dunkerley; "De la Beche" medal for mining, Samuel W. Price; "Bessemer" medal and prize of books for metallurgy, Allan Gibb; "Frank Hatton" prize of books for chemistry, Robert E. Barnett. Prizes of books given by the Department of Science and Art: Mechanics, William H. Pretty; astronomical physics, William E. Tubbs, Willie Whalley; practical chemistry, Robert E. Barnett, Gerald G. Quinn; mining, Samuel W. Price; principles of agriculture, Robert S. Seton.

DR. BUTLER, Master of Trinity College, Dr. Hill, Master of Downing College, Dr. Peile, Master of Christ's College, Dr. Sidgwick, Knightbridge Professor, Dr. Jebb, Regius Professor of Greek, Dr. J. Ward, Dr. Keynes, Mr. F. E. Kitchener, Mr. R. T. Wright, and Mr. A. Berry will represent Cambridge University at a conference on the relations between the work of the Universities and the work of secondary education in England, to be held at Oxford on October 10 and 11, 1893.

MR. HENDRICK, of the Royal Agricultural College, Cirencester, has been appointed lecturer and demonstrator in agricultural chemistry by the Glasgow and West of Scotland Technical College.

PROF. W. GARNETT, M.A., D.C.L., Principal of the Durham College of Science, Newcastle-on-Tyne, has been appointed director and technical adviser to the Technical Education Board of the London County Council.

SCIENTIFIC SERIALS.

THE most important papers in the *Botanical Gazette* for April and May are an account of a newly-discovered fungus, *Phyllogaster saccatus*, by Mr. R. Thaxter, proposed as the type of a new family, *Phyllogastreæ*, characterised by the absence of any volva or receptacle differentiated as such in the mature condition; on the tendrils of *Passiflora cœrulea*, by Mr. D. T. McDougal, in which the author states that the tendrils of the passion-flower are sensitive to contact with one another, contrary to Darwin's experience with *Bryonia* and *Echinocystis*; on the limitation of the term "spore," by Prof. C. McMillan, which does not seem to throw much light on the confusion at present prevailing; the commencement of a paper, by Mr. G. F. Atkinson, on the biology of the organism which causes the root-tubercles in the *Leguminosæ*; and on the genus *Corallorhiza*, by Mr. M. B. Thomas, who finds in the cells of the cortical tissue hyphal threads which he regards as the agent by means of which the plant is able to derive nutriment saprophytically from the decaying vegetable matter around it.

IN the *Journal of Botany*, for May and June, in addition to the serial papers to which allusion has already been made, Mr. W. Phillips describes the rare fungus, *Gyromitra gigas*; Messrs. E. F. and W. R. Linton, in a paper on British hawkweeds, add four more to the already too numerous British species or subspecies of *Hieracium*, viz. *H. graniticolum*, *clovense*, *Boswelli*, and *stenophyes*; in an article on some marine algæ from New Zealand, Mr. R. J. Harvey Gibson describes and figures a new seaweed, *Rhodocorton Parkeri*.

Meteorologische Zeitschrift, June.—On the climatic effect of forests upon their neighbourhood, by E. Ebermayer. The discussion is based upon observations made in Austria since 1866, and the results arrived at are that forests do exert an influence on temperature and humidity, but not to the same extent as mountains and large lakes. Within the forest the daytime is naturally cooler and the nights warmer, while some of the effects are beneficial and others injurious to vegetation. The connection between forests and rainfall is not proved; in any case the effect on local distribution of rainfall is quite subordinate.—Earth temperatures at Hamburg, in the years 1886–91, by W. J. van Bebber. Monthly and extreme values are given at depths of half a metre, and for each metre up to five, together with the temperature of the air and of the surface of the Elbe. The average extreme annual variation, at a depth of 0·5 m. amounts to 30°·6 F., but at a depth of 5m. the variation falls to 8°·1. At the former depth extreme temperatures of 66° and 30° occasionally occur, while at the latter depth temperatures exceeding 52°, or less than 39°, are very seldom recorded.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, June 15.—"On *Megaladapis madagascariensis*, an extinct gigantic Lemuroid from Madagascar." By C. J. Forsyth Major, M.D., For. Corr. Zool. Soc. (Communicated by Dr. Henry Woodward, F.R.S., V.P.G.S., &c.).

It is now forty-two years since Isidore Geoffrey Ste.-Hilaire announced to the French Academy of Science the discovery of gigantic eggs and a few bones of *Æpyornis* from superficial deposits in the island of Madagascar, anticipating that a rich fauna of extinct vertebrata would be speedily forthcoming.

Little has, however, been added to our knowledge since 1851 until the present time. In addition to the remains of a Crocodile, two Chelonians, and a *Hippopotamus*, first discovered by Grandidier, the number of distinct forms of *Æpyornis* is now rapidly increasing, and promises to rival in variety the New Zealand species of *Dinornis*, whilst the disclosure of a rich mammalian fauna seems only waiting to reward the carrying out of systematic exploration.

Four collections of sub-fossil vertebrates, from various regions of Madagascar, have recently been acquired by the British Museum of Natural History. Amongst one of these, sent over by Mr. J. T. Last (collector for Mr. Grose-Smith), is a somewhat imperfect skull of strange appearance obtained with numerous fragmentary Chelonian, Crocodilian, Hippopotamus, and Æpyornis-remains from a marsh at Ambolisatra on the south-west coast of Madagascar. For this remarkable fossil Dr. Major proposes the name of *Megaladapis madagascariensis*, and the establishment of a distinct family of the sub-order *Lemuroidea*, of which *Megaladapis* appears to be a much-specialised gigantic member, being approximately three times the size of the cranium of the largest existing Lemurid.

The salient features of the skull are the enormous lateral development of the anterior inter-orbital portion of the frontals, extending over the small, thick-walled tubular orbits. The post-orbital frontal region is comparatively narrow and elongate, and separated by a slight contraction from the equally narrow parietal region, bearing a thick and flattened sagittal crest. The brain-case is low, short, and narrow, and placed at a considerably higher level than the elongate facial portion. Both the cranial and facial portion are somewhat bent upwards, the former posteriorly, the latter anteriorly. A striking general character is the remarkable *pachyostosis* (thickening) of the cranium.

The author points out that, in its peculiar features, this skull

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